Crystals and quantum twist automorphisms

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The quantum twist automorphism constructed by Kimura and Oya is a quantum analogue of the twist automorphism on a unipotent cell introduced by Berenstein, Fomin and Zelevinsky. This quantum twist automorphism naturally arises in the study of quantum groups, (quantum) cluster algebras and categorification. In this talk, we will present a recent result about a new crystal-theoretic description of the quantum twist automorphism in terms of the crystal basis theory, and show several examples obtained by using the new crystal-theoretic description. This talk is based on a join work with Woo-Seok Jung (arXiv:2507.01306).